

NATURAL RESOURCES CONSERVATION SERVICE

CONSTRUCTION SPECIFICATION

378 – POND – OUTLET PIPE

1. SCOPE

This work shall consist of furnishing materials, fabricating structures, excavating, backfilling, and installing the pond outlet pipe. This work may include but is not limited to riser, concrete riser joint block, barrel, anti-vortex device, anti-seep collars, fittings, trash guard, bedding, drain fill and related appurtenances. These items shall be installed as shown on the drawings and as specified herein.

Prior to commencing construction, public utilities shall be notified in accordance with N.Y.S. Industrial Code 753.

2. MATERIALS

The materials required for the pond outlet pipe shall be as shown on the drawings or in Section 11. The materials specified shall meet the quality requirements as listed in the following latest revision of the appropriate ASTM specification.

ASTM Specification

PIPE

D-2241	PVC Pressure-Rated Pipe (SDR Series)
D-1785	PVC Plastic Pipe, Schedules 40, 80, and 120
D-2466	PVC Plastic Pipe Fittings, Schedule 40
D-2564	Solvent Cements for PVC Plastic Piping Systems
D-2104	PE Plastic Pipe, Schedule 40
D-2239	PE Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter
D-2447	PE Plastic Pipe, Schedules 40 and 80, Based on Outside Diameter
F-894	PE Large Diameter Profile Wall Sewer and Drain Pipe
A-760	Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains
B-745B	Corrugated Aluminum Pipe for Sewers and Drains
C-76	Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
C-655	Reinforced Concrete D-Load Culvert, Storm Drain, and Sewer Pipe

3. EXCAVATION

All trench excavations over 5 feet shall be sloped or shored in accordance with OSHA part 1926 and N.Y.S. Industrial Code 23. When bracing or other supporting is required, the width of the excavation shall be adjusted to allow space for the shoring. The contractor shall furnish, place and subsequently remove such supporting installations as necessary to safeguard workers and work.

All excavations or trench excavations for the pond outlet pipe shall be constructed to the widths, depths, lines, grades, elevations and cross sections as shown on the drawings.

4. BEDDING

In stable soils, the conduit shall be firmly and uniformly bedded throughout its entire length with the bedding material shown on the drawings or as specified in Section 11 to the depths shown on the drawings. If no bedding is specified or bedding is to be trench-excavated material, the trench bottom shall be scarified and grooved to provide good support under the pipe haunches.

When soil foundations are found to be unstable, a suitable foundation is to be provided by over excavation of the foundation then backfilling with a suitable compacted material to provide a firm uniform sub-base. A suitable foundation can be provided by spanning the unstable foundation area with a structural support system that will carry the bedding, piping and backfill loads anticipated and maintain the grades shown on the drawings.

5. RISER

The riser shall be placed on a firm foundation to the lines and grades shown on the plans. Riser material shall be as specified on the drawings. The riser shall be connected to the barrel with a watertight connection.

If specified, thrust blocks or joint blocks shall consist of concrete placed to the dimensions shown on the drawings. The concrete will meet the provisions of ASTM C-94. Cement shall be Type I or IA and will be a minimum of 5 bags per cubic yard. Cement will have an air content of 4 - 7%. Coarse aggregate will conform to ASTM C33 size numbers 467, 57, or 67. Slump will be 4" + 1". The block cavity shall be hand dug into undisturbed soil and framed, with soil or wood, to hold freshly placed concrete. Backfill shall not begin until at least 24 hours after placement of the block.

An anti-vortex device and trash guard, if specified, shall be installed as shown on the drawings.

6. BARREL

Barrel material shall be handled and installed according to manufacturer's recommendations. The pipe, fittings, and outlets are to be placed to the lines, grades, and elevations shown on the drawings. The placement of the pipe is not to be accomplished until the specified bedding is in place.

Barrels with bell joints shall be placed with the bell end upstream.

7. ANTI-SEEP COLLARS

The anti-seep collar, if specified, shall be a material compatible with the barrel material. All connections between the anti-seep collars and barrel shall be watertight.

The number, size, spacing and type of anti-seep collars shall be installed as shown on the drawings.

8. CONNECTIONS

All elastomeric seal or solvent cement pipe joints and connections shall be made with manufactured fittings that are of the same material and are comparable in strength as the pipe and according to manufacturer's recommendations. Barrel connections to

fabricated structures are to be watertight joints unless otherwise specified or approved by the approving official or designated representative.

9. BACKFILLING

Prior to backfilling, the pond outlet pipe installation shall be inspected and approved for line, grade, depth, bedding, and pipe placement by the approving official or designated representative. The backfill material shall be as shown on the drawings or as specified in Section 11. Backfill material shall contain no frozen soil, brush, roots, debris or other objectionable material.

After placement has been approved, initial backfilling (blinding) of the riser and barrel shall be accomplished with the specified backfill material. Initial backfill material shall be placed around the riser and barrel in 4 inch layers. Each layer shall be thoroughly compacted with 3 passes of a vibratory plate compactor, unless otherwise authorized by an approving official. It shall be placed to a thickness of 12 inches around any structure and to a width of 6 inches on each side and over the top of the barrel, being careful not to cause any damage or displacement of the anti-seep collars, barrel, or riser.

The final backfilling of the trench shall be completed as soon after blinding as conditions permit being careful not to damage or displace the structure with backfilling equipment or backfill material.

10. MEASUREMENT AND PAYMENT

For items of work for which specific lump sum prices are established in the contract, the quantity of pond outlet pipe will not be measured. Payment for the pond outlet pipe will be made at the contract lump sum price. Such payment will constitute full compensation for all labor, materials, equipment, tools, and other appurtenances necessary and incidental to the completion of the work.

Compensation for any item of work described in the contract but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in Section 11.

11. ITEMS OF WORK AND ADDITIONAL CONDITIONS: